

WHAT IS CLAIMED IS:

1. An image processing apparatus, comprising:
 - a calculator arranged to calculate an output color
 - 5 corresponding to an input color;
 - a cache memory arranged to cache a calculation
 - result of said calculator in order to uniquely determine
 - an output color corresponding to an input color;
 - a converter arranged to convert an input color to
 - 10 an output color in predetermined processing unit, by
 - utilizing said calculator and said cache; and
 - a controller arranged to control a caching method
 - to be applied to a subsequent processing unit based on a
 - cache hit rate per said processing unit.
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2. The apparatus according to claim 1, wherein said
- controller controls an application area of the caching
- method based on the cache hit rate.
- 20 3. The apparatus according to claim 1, wherein the
- caching method comprises a method of caching a value of
- one pixel for referring to the value of an immediately
- preceding pixel, and a method of no caching.
- 25 4. The apparatus according to claim 1, wherein the
- caching method comprises a method of caching values of
- plural pixels for referring to the values of already-

processed plural pixels, and a method of no caching.

5. The apparatus according to claim 1, wherein the caching method comprises a method of caching a value of one pixel for referring to the value of an immediately preceding pixel, a method of caching values of plural pixels for referring to the values of already-processed plural pixels, and a method of no caching.

10 6. The apparatus according to claim 1, wherein said apparatus performs color matching processing on an image.

15 7. A control method of an image processing apparatus having a calculator arranged to calculate an output color corresponding to an input color, a cache memory arranged to cache a calculation result of the calculator in order to uniquely determine an output color corresponding to an input color, and a converter arranged to convert an input color to an output color in predetermined processing unit, by utilizing the calculator and the cache, comprising the step of controlling a caching method to be applied to a subsequent processing unit based on a cache hit rate per
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25 said processing unit.

8. The method according to claim 7, further

comprising the step of controlling an application area
of the caching method based on the cache hit rate.

9. The method according to claim 7, wherein the
5 caching method comprises a method of caching a value of
one pixel for referring to the value of an immediately
preceding pixel, and a method of no caching.

10. The method according to claim 7, wherein the
10 caching method comprises a method of caching values of
plural pixels for referring to the values of already-
processed plural pixels, and a method of no caching.

11. The method according to claim 7, wherein the
15 caching method comprises a method of caching a value of
one pixel for referring to the value of an immediately
preceding pixel, a method of caching values of plural
pixels for referring to the values of already-processed
plural pixels, and a method of no caching.

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12. The method according to claim 7, wherein said
apparatus performs color matching processing on an
image.

25 13. An image processing method comprising the steps
of:

converting an input color to an output color in

predetermined processing unit by calculating an output color corresponding to an input color and utilizing caching arranged to uniquely determine an output color corresponding to an input color; and

- 5 controlling a caching method to be applied to a subsequent processing unit based on a cache hit rate per said processing unit.

14. The method according to claim 13, further
10 comprising the step of controlling an application area of the caching method based on the cache hit rate.

15. The method according to claim 13, wherein the caching method comprises a method of caching a value of
15 one pixel for referring to the value of an immediately preceding pixel, and a method of no caching.

16. The method according to claim 13, wherein the caching method comprises a method of caching values of
20 plural pixels for referring to the values of already-processed plural pixels, and a method of no caching.

17. The method according to claim 13, wherein the caching method comprises a method of caching a value of
25 one pixel for referring to the value of an immediately preceding pixel, a method of caching values of plural pixels for referring to the values of already-processed

plural pixels, and a method of no caching.

18. A computer program product comprising a computer
readable medium storing a computer program code, for a
5 control method of an image processing apparatus having a
calculator arranged to calculate an output color
corresponding to an input color, a cache memory arranged
to cache a calculation result of the calculator in order
to uniquely determine an output color corresponding to
10 an input color, and a converter arranged to convert an
input color to an output color in predetermined
processing unit, by utilizing the calculator and the
cache, comprising a process procedure code for
controlling a caching method to be applied to a
15 subsequent processing unit based on a cache hit rate per
said processing unit.

19. A computer program product comprising a computer
readable medium storing a computer program code, for an
20 image processing method, comprising process procedure
codes for converting an input color to an output color
in predetermined processing unit by calculating an
output color corresponding to an input color and
utilizing caching arranged to uniquely determine an
25 output color corresponding to an input color; and
controlling a caching method to be applied to a
subsequent processing unit based on a cache hit rate per

said processing unit.

continued